

NEVADA DIVISION OF ENVIRONMENTAL PROTECTION

FACT SHEET

(pursuant to NAC 445A.236)

Permittee: Barrick Goldstrike Mines Inc.
P.O. Box 29
Elko, Nevada 89803

Permit: NEV94002 - Renewal

Location: Barrick Goldstrike Mine

North Block Tailings Facility
Latitude: 41° 00' 12"N; Longitude: 116° 23' 00"W

AA Tailings Facility
Latitude: 41° 59' 08"N; Longitude: 116° 21' 40"W

Brush Creek Tailings Facility (future)
Latitude: 41° 59' 29"N; Longitude: 116° 21' 08"W

Township 36N, Range 49E, Sections 12 and 13 and
Township 36N, Range 50 E, Sections 7, 8, 17, 18, 19, 20, 21, and 29 MDB&M

Public Water Supply: The zero-discharge tailings facilities are not located within a wellhead capture zone, but some are located within drinking water protection area four, 6,000 feet from the nearest public water supply well.

General: The Permittee operates a gold mining complex in Elko and Eureka Counties, approximately 27 miles northwest of Carlin, Nevada, in the Little Boulder Basin, adjacent to the Tuscarora Range. This permit was originally issued in August 1994 and was combined with permit NEV89027 in June 2000, then was modified in November 2002 and January 2003 and renewed in April 2004. The Permittee proposes to renew the permit to continue the discharge to lined tailings impoundments and to beneficially use the reclaim water, modifying the permit to reflect an increase in the number of tailings facilities authorized to receive domestic waste.

The Permittee's wastewater collection, treatment, and disposal system is comprised of the following components: two sanitary sewer collection systems; an influent lift station; a septage receiving station; the Meikle rotating biological contactor package wastewater treatment plant (Meikle RBC-WWTP); the Goldstrike RBC-WWTP; an effluent lift station; the North Block Tailings Facility (NBTF), the AA Tailings Facility (AATF) the NBTF and AATF seepage collection sumps; and the NBTF and AATF drainage collection ponds. The Goldstrike and Meikle RBC design flows are 42,000 gallons per day (gpd) and 14,700 gpd, respectively. The RBCs are operated for primary settling and grinding purposes only, not biological treatment as the plants were designed, therefore, a certified operator is not required and the flow limitations do not apply. Discharge to the NBTF is authorized by NEV94002; discharge to AATF is authorized through March 4, 2008 by Temporary Permit TNEV2008314. AATF may be run periodically in parallel with NBTF to effectively manage tailings. The future Brush Creek Tailings Facility (BCTF) may be constructed during the 5-year term of this permit.

Domestic wastewater from most mine buildings and offices is directed to one of the RBCs by sanitary sewers. A gravity sewer delivers influent to the Meikle RBC with the effluent from the RBC flowing to the seepage collection sump, Outfall 001. The mixture of effluent and NBTF seepage is then pumped into the NBTF. Domestic wastewater from the Goldstrike facilities is collected in the deep sewer that requires the use of a lift station adjacent to the Goldstrike RBC. The Goldstrike RBC effluent is pumped to the NBTF via the tailings pumphouse, Outfall 005. Supernatant water is pumped from the tailings impoundments to the milling and roasting circuits via barge pumps.

Much of the mine infrastructure is dispersed and located in remote areas, due to the nature of large-scale mining. Many of these areas have low flows or are located in areas where sanitary sewer collection is impractical. These areas are provided sanitary service by means of septic systems, holding tanks, or portable toilets. Domestic wastewater from the Roaster Facility, Outfall 002, and the Rodeo Project, Outfall 004, is treated in septic tanks with the effluent from the septic tanks being pumped to the tailings distribution system via a grinder pump and the 10-inch effluent line from the Meikle RBC, Outfall 002, and to one of the tailings facilities via the 30-inch diameter tailings disposal line, Outfall 004. Pumped septic tank solids and portable toilet and holding tank liquids and solids are discharged through a manual bar screen to the Goldstrike RBC influent lift station where it is comingled with sewer flows and pumped into the RBC.

An estimated 20 gpd of wastewater from the coagulation/microfiltration unit of the potable water treatment plant is discharged to the effluent line from the Meikle RBC.

As part of the Fall 2002 NBTF raise, a tails box was constructed with a septage hauler connection. RBC solids are disposed to one of the tailings facilities via the tails box. The area adjacent to the pumper connection at the tails box is sloped towards the NBTF, so that any accidental release is directed to the NBTF.

The tailings facilities are required to be designed, constructed, operated, and closed without any discharge or release in excess of those standards established in regulation except for meteorological events that exceed the design storm event. The NBTF design, construction, tailings placement, and monitoring is permitted by the Bureau of Mining Regulation and Reclamation (BMRR), NEV91029. The NBTF composite liner consists of a 12-inch thick, compacted layer of low permeability, 1.0×10^{-6} cm/sec or less, soil overlain by a synthetic liner. For Stage 8 of the NBTF, the composite liner system consists of compacted soil which has a higher permeability overlain by geo-composite clay liner, (GCL), which is overlain by 60- or 80-mil linear low density polyethylene. To minimize hydraulic head on the composite liner, the NBTF was constructed with a basin underdrain system that drains to a concrete seepage collection sump. Recycle pumps return collected fluid, seepage and wastewaters, from the sump to the impoundment. If the pumps fail, the sump will overflow to the double-lined drainage collection pond. The NBTF has been designed to contain approximately 175 million tons of subaerial deposited tailings.

The AATF design, construction, tailings placement, and monitoring is permitted by the BMRR, NEV90060. The AATF is lined with native materials. In areas where the in-place materials have permeability greater than 10^{-6} cm/sec, a 12-inch compacted clay liner, permeability $>10^{-7}$ cm/sec, has been installed. A 1-foot thick sand/gravel blanket overlays the clay liner in the deeper parts of the impoundment. A minimum 2 feet of compacted soil with a permeability of $<10^{-5}$ cm was placed

over the blanket to minimize the hydraulic head imposed on the drain. A synthetic liner was placed over higher permeability zones within the north embankment area. The AATF also utilizes a concrete seepage collection sump and a drainage collection pond.

The location of the BCTF has been selected but the facility has not yet been designed or permitted by BMRR.

The updated facility Operations and Maintenance Manual was approved by the Division December 3, 2007.

Receiving Water Characteristics: The effluent from the non-operating RBCs and the septic tanks and the accumulated RBC solids will be discharged into the lined tailings facilities along with over 38,000 tons per day of ground ore in slurry form. The pH of the tailings slurry is 10.0 standard units or greater. Because of this high pH and the inorganic nature of the tailings, this environment is hostile to potential pathogenic and enteric microbes in the domestic waste.

The NBTF and AATF are classified as a zero discharge facilities, as authorized by NEV91029 and NEV90060, respectively. BMRR will require BCTF to be designed and constructed to the same zero discharge standard of performance. Groundwater is approximately 210 feet below NBTF at an elevation of approximately 5,288 feet.

Characteristics: This permit will continue to authorize the disposal of domestic/sanitary wastes generated by the Permittee's Barrick Goldstrike Mine workforce only in the lined tailings facilities. Domestic waste that is collected in two sewer systems, most septic tanks, holding tanks, and portable toilets is settled and ground in the two non-operating RBCs with the effluent discharged to one of the tailings facilities. The Rodeo septic tank effluent is pumped to one of the tailings facilities via the tailings disposal line. RBC solids are discharged to one of the tailings facilities via the tails distribution box.

From the second quarter of 2004 through the third quarter of 2007, fecal coliform was detected once, first quarter 2007, at a density of 1 mpn/100ml, in the reclaim water.

Flow: The total flow of domestic waste to the tailings facilities is limited to 0.150 million gallons per day (MGD). The 30-day average total flow since the April 2004 permit renewal is 0.054 MGD. The third quarter 2007 30-day average flows for the individual outfalls were as follows:

| | |
|-------------------------------|------------------|
| Outfall 001, Meikle RBC | 0.022 MGD |
| Outfall 005, Goldstrike RBC | 0.017 MGD |
| Outfall 002, Roaster Facility | 0.003 MGD |
| Outfall 004, Rodeo Project | 0.004 MGD |
| Pumper Trucks | 0.000 MGD |
| TOTAL | 0.046 MGD |

The flow to the RBC package plants is not limited because the plants are being used for settling and grinding , not biological treatment.

Proposed Effluent Limitations: During the period beginning on the effective date of this permit

and lasting until the permit expires, the Permittee is authorized to discharge domestic/sanitary waste generated by the Barrick Goldstrike Mine workforce from:

Liquids

- the Meikle RBC, Outfall 001;
- an approved septic tank at the Roaster Facility, Outfall 002;
- an approved septic tank at the Rodeo Project, Outfall 004; and
- the Goldstrike RBC, Outfall 005;

Solids

- the sludge from the Meikle and Goldstrike RBCs;

to the NBTF, AATF, and BCTF.

This permit also authorizes the discharge of holding tank fluids and solids and portable toilet fluids and solids to either the Meikle or Goldstrike RBC.

The discharge shall be limited and monitored by the Permittee as specified below:

EFFLUENT DISCHARGE LIMITATIONS

| PARAMETER | DISCHARGE LIMITATIONS | | MONITORING REQUIREMENTS | | |
|---------------------------------------|-----------------------|---------------|------------------------------|-------------------------|-------------------------|
| | 30 - Day Average | Daily Maximum | Sample Locations | Measurement Frequency | Sample Type |
| Flow, Outfall 001 (mgd) | Monitor & Report | | Influent | Continuous ⁶ | Flow Meter |
| Flow, Outfall 005 (mgd) | Monitor & Report | | Influent | Continuous ⁶ | Hour Meter |
| Flow, Outfall 002 (mgd) | Monitor & Report | | Influent | Quarterly ⁶ | Calculate ¹ |
| Flow, Outfall 004 (mgd) | Monitor & Report | | Influent | Quarterly ⁶ | Calculate ¹ |
| Pumper Truck Discharge (mgd) | Monitor & Report | | Truck Discharge ² | Each Load ⁶ | Flow Meter ² |
| Total Discharge (mgd) | 0.150 | | Σ Influent ³ | Quarterly | Calculate |
| Tailings Facility Receiving Discharge | Monitor & Report | | Each Tailings Facility | Daily | Observation |
| Tailings Discharged (mgd) | Monitor & Report | | ⁴ | Quarterly | Estimate |
| Fecal Coliform (cfu or mpn/100 ml) | 2.2 | 23 | Reclaim water ⁵ | Quarterly | Discrete |

Notes:

- ¹: Calculate average daily discharge based on the Uniform Plumbing Code and the maximum monthly average number of employees at each location.
- ²: The volume of RBC solids shall be determined from the evacuated volume as reported by the pumper truck operators and reported quarterly.

3. Sum of the flows at Outfalls 001, 002, 004, and 005 and the volume discharge from the pumper trucks to each of the tailings facilities.
 4. The method and location of estimating the volume of tailings discharge to each tailings facility shall be explained in the Operations and Maintenance Manual. Report tailings discharged to each tailings facility.
 5. Analyze reclaim water from all tailings facilities used during the quarter.
 6. When discharging to more than one tailings facility per quarter, report discharge to each impoundment separately.
- mgd: Million gallons per day.
cfu or mpn/100 ml: Colony forming units or most probable number per 100 milliliters.

Schedule of Compliance and Special Conditions: The Permittee shall implement and comply with the provisions of the schedule of compliance after approval by the Administrator, including in said implementation and compliance, any additions or modifications which the Administrator may make in approving the schedule of compliance. The Permittee shall implement and/or execute the following scheduled compliance requirements:

- a. Upon the effective date of this permit, the Permittee shall achieve compliance with the permit conditions and limitations.
- b. Within five (5) days of the first use of the Brush Creek Tailings Facility, the Permittee shall notify the Division of such use.
- c. Within forty-five (45) days of the first use of the Brush Creek Tailings Facility, the Permittee shall submit a revised system operations and maintenance manual to the Division for review and approval.

There are no special conditions.

Rationale for Permit Requirements: Since the RBCs are only used to settle and grind solids and no longer biologically treat sanitary wastes, the design treatment capacity of the RBCs is not a permit limitation. Flow from the two RBCs, the Roaster and Rodeo septic tanks, and the solids from the RBCs will be monitored to verify the permit fee category.

Secondary treatment standards do not apply because the effluent and solids are discharged to lined, zero discharge tailings facilities. The liquid portion is contained and reused within a limited human contact environment. The tailings facilities contain the discharge and treat the waste via dilution, detention, pH control, and mixing. The discharge from the milling and roasting facilities is approximately 1,000 times the volume of the sanitary discharge. Mixing occurs due to turbulence in the tailings discharge pipe, the tails box, and pumps.

The volume of tailings discharged to the tailings facilities is monitored to document the dilution factor.

The fecal coliform monitoring requirement was established to insure that the water being reclaimed from the tailings facilities have minimal concentrations of pathogens.

Proposed Determination: The Division has made the tentative determination to issue the proposed permit for a five (5) year period.

Procedures for Public Comment: The Notice of the Division's intent to issue a permit authorizing the Permittee to continue to discharge domestic waste to lined tailings facilities, subject to the conditions contained within the permit, is being sent to the **Elko Daily Free Press** for publication. The notice is being mailed to interested persons on the Division's mailing list. Anyone wishing to comment on the proposed permit can do so in writing for a period of 30 days following the date of publication of the public notice in the newspapers. The date and time by which all written comment must be postmarked or transmitted to the Division via facsimile or e-mail is **5:00 P.M. April 10, 2008**. The comment period can be extended at the discretion of the Administrator.

A public hearing on the proposed determination can be requested by the applicant, any affected State, any affected interstate agency, the Regional Administrator of EPA Region IX or any interested agency, person or group of persons. The request must be filed within the comment period, must indicate the interest of the person filing the request, and must state the reasons why a hearing is warranted. Any public hearing determined by the Administrator to be held must be conducted in the geographical area of the proposed discharge or any other area the Administrator determined to be appropriate. All public hearings must be conducted in accordance with NAC 445A.238.

The final determination of the Administrator may be appealed to the State Environmental Commission pursuant to NRS 445A.605.

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